

# QUARTERLY STATUS REPORT

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**DATE:** 7/25/03

**PROJECT:** Evaluation of Wildlife Crossing Structures on US Highway 93  
Evarto to Polson—Phase 1: Pre-construction data collection and finalization of evaluation  
plan

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## **ANTICIPATED**

### **PRODUCTS:**

- ?? Memo to Technical Design Committee on monitoring design considerations (completed May 2002)
  - ?? Animal-vehicle collision database (25% complete)
  - ?? Field Methods and Safety Protocol Handbook (25% complete)
  - ?? Summary of literature and existing data (25% complete)
  - ?? Memo defining the Measures of Effectiveness (0% complete)
  - ?? Long-term Research and Monitoring Evaluation Plan (30% complete)
  - ?? Phase 1 Pre-construction Case Study (25% complete)
  - ?? Pre-construction field data summary report (10% complete)
  - ?? Pre-construction black bear movement and genetics study (30% complete)
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## **STATUS OF ACTIVITIES AND PRODUCTS (E.G., PROJECT MILESTONES, DELIVERABLES, PRODUCT DISSEMINATION, RELEVANT DIVISION ACTIVITIES) FOR THE PROJECT:**

**Previous Quarterly Report submitted April 2003. This report entails the activities from April 1, 2003 – June 30, 2003.**

### ***On-going Activities***

- ?? Literature search and compilation of relevant data.
- ?? Discussions on research issues, direction, and potential partnerships with MDT research manager and district biologist, Confederated Salish and Kootenai Tribes (CSKT) tribal biologist, Montana State University and University of Montana (UM) Ecology/Wildlife Departments and GIS center, Salish Kootenai College (SKC), and Wildlife Conservation Society (WCS)
- ?? Attendance of US 93 Technical Design Committee meetings to document decision-making process for wildlife crossings and fencing design issues for case study.

### ***April 2003***

- ?? Selected qualified Native American student for the graduate fellowship collaboration between Wildlife Conservation Service (WCS) and WTI Education Program.

Selected student will pursue an MS in Wildlife Biology at MSU and will complete a research thesis on an aspect of this project, outside of and complementary to this work scope. WTI and WCS are searching for tenure track MSU Ecology Department professor to mentor the graduate student committee (mandatory requirement).

- ?? Organized logistics, traffic control, and materials for May deployment of the tracking beds. Gathered low bid price quotes for materials and services.
- ?? Resubmitted refined schedules and budgets for contract amendment. MDT requested more detail; WTI responded to this request with another version of the scope.
- ?? Organized traffic monitoring equipment, ordered new supplies for summer season of data collection. Sent equipment and supplies to Karin McCoy (UM grad student working on US 93 bear study) for her to set-up, maintain, and collect traffic data through October.
- ?? Interview with Tom Arrandale on US 93 wildlife crossing mitigation for his environmental column in Governing Magazine.

### ***May 2003***

- ?? Sent formal letter to MDT (Doug Moller, Missoula District Maintenance Supervisor) requesting approval of tracking bed deployment plan; response was positive and permission to proceed was granted.
- ?? Installed 45 sand tracking beds in Evaro and Ravalli Curves area (the final 17 beds were installed in the Ravalli Hill area in July). Each tracking bed measures approximately 100 x 2.4 m, and contains about 15 tons of tracking substrate (sand with some crushed rock). Tracking beds will be monitored for tracks on a regular basis to determine what wildlife are moving near the road and to estimate the number of animal movements across the road before the road is reconstructed and the wildlife fencing and crossing structures are installed. Once the wildlife fencing and crossing structures are in place, tracking beds will be installed both in- and outside of the structures; the beds inside the crossing structures are not exposed to weathering that can cause tracks to disappear. These beds will provide a measurement of the absolute use of the crossing structures while the beds outside the crossing structures will enable us to make a comparison with the animal crossing rates before construction.
- ?? Continued researching infrared video system (note: It is expected that IR video equipment will be purchased with WTI funds) to estimate error rates associated with tracking bed exposure to weather elements and to address potential issues with animal behavioral avoidances of tracking beds. Due to high price quotes from vendors that develop such systems, we are exploring components of the system that we can pull together and integrate on our own in order to lower costs.
- ?? Pulled the motion and heat-detection cameras from under the MRL underpass in the Evaro area. Monitoring technique was used for previous year and provided us with an idea of what wildlife were passing through the area and when. With the installation of the tracking beds, we decided to refocus our resources and efforts into the tracking bed data collection and population density estimates.
- ?? Meeting with Darren Baune, WTI Graduate Fellow (in Civil Engineering), regarding his hydraulics and fish passage thesis project on East Finley and Schley Creeks. Helped coordinate thesis project work with Entranco (the engineering firm designing the section of US 93 that includes those creeks) to assist with design

recommendations for the combination aquatic and terrestrial wildlife crossing that will be installed at both of those creek crossings. Assisted with CSKT research permitting process and communication with CSKT fisheries biologists.

- ?? Interview with George Sibley, documentary film director. Sibley is interested in the US 93 project and will be coming out to interview and film the project in August.

### ***June 2003***

- ?? Researched motion and heat-triggered cameras to use inside crossing structures (post-construction). Decided on a model and forwarded the specs on the model to TDH Engineers (the first design firm with crossing structures that will be installed at Jocko Hollow) so that design incorporated a standard bracket design detail inside crossing structures.
- ?? Co-PI Marcel Huijser attended meeting about Kathy Griffin's PhD dissertation research on turtles in the Nine Pipes area. Reviewed and commented on experimental design approach for testing turtle responses to different culvert and fencing designs.
- ?? Continued IR video research (see details above).
- ?? Began monitoring of tracking beds began in early June. Refining tracking data collection methods, sampling schedule. Finding deer and bear (primary species of interest) tracks regularly. Small and medium mammals more difficult to identify due to the tracking substrate (especially in dry conditions) but still able to index activity and crossing events for these general suites of species. Only issue unaccounted for: grass coming up from under the landscaping material; may require herbicide if vegetation emergence interferes with tracking media too much.
- ?? Researched and purchased soil temperature and precipitation meters for tracking bed (covariate) data.
- ?? Compiled literature on wildlife population density estimation techniques (pellet counts). Will coordinate this effort with CSKT Biologist Dale Becker to avoid repetition of effort and adopt techniques that are useful to this project as well as overall CSKT wildlife program goals.
- ?? Discussed potential undergraduate research thesis with Salish Kootenai College student and advisor Bill Swaney. Project would be on some related aspect of this project, outside of and complementary to this work scope.
- ?? Continued discussions with WCS and MSU Ecology Department professors to find an appropriate mentor for the joint WCS/WTI Native American Graduate Fellowship position.

### ***Summary***

Efforts, to date, have been centered on establishing the pre-construction field monitoring methods. Many aspects of the pre-construction monitoring program are in place (bear study, traffic counts, road-kill data collection, tracking bed protocol). The protocols for these data collection efforts are being refined and the databases and quality assurance/quality control systems are being established and will be documented in the Field Methods Handbook. WTI is attending TDC meetings to collaborate on monitoring design and to document decision-making processes related to wildlife mitigation for the case study. WTI is finalizing the budget and schedule in order to amend the contract with MDT for the entire \$562,500.